ENTERPRISE CONTENT MANAGEMENT

Technology Analysis Abstract*

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Vendor Assessment & Quantitative Teams

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EXECUTIVE SUMMARY

TECHNOLOGY ANALYSIS SCOPE & METHODOLOGY

In response to feedback from our membership, CEB TowerGroup developed this technology analysis product to identify key components of an enterprise content management (ECM) system investment decision and effectively compare vendor technology products. Our methodology comes from the knowledge that investment decisions center around customization for specific financial services institution (FSI) lines-of-business rather than the feature set alone.

This analysis is tailored to reflect the needs of the end user, to diagnose the technology attributes particular to each FSI, and to effectively identify enterprise content management systems that align with the firm’s needs. To that end, CEB TowerGroup conducted a series of interviews and surveys with financial services executives, industry experts, and vendors regarding enterprise content management technology. The results of this research formed the basis of our diagnostic anatomy and informed the proprietary five point rating system on which we scored individual products.

CURRENT MARKET & FUTURE INVESTMENT

Cost reduction, compliance, and customer service are driving investment in ECM systems. Cost reduction continues to be a priority as banks climb back from historically low profitability and face increasing regulatory burdens. Organizations report shortcomings in compliance-related document processing and in the management of unstructured content types collected via the Web. Firms are recognizing the potential of ECM to improve customer service by adding transparency and self-service to customers during content-heavy processes like mortgage origination and servicing, as well as in the rapidly growing area of mobile content capture and distribution.

Banks can use strategic investments in emerging ECM capabilities to solve key shortcomings of consumer- and employee-facing processes and technology. Banks no longer view ECM as simply a back-end repository, but are realizing the potential for ECM and workflow integration to exchange documents with consumers and increase consumer self-service. Further, by enabling employee access to content and processes through mobile devices, banks can empower their remote workforce with greater control over their responsibilities.

Almost two-thirds of executives believe that their firm will increase its ECM spending within the next fiscal year. Financial institutions are investing in ECM systems that will improve processing efficiency and customer service, and are seeking vendors that can also provide deployments customized to the retail banking industry. Further, as new regulations in Europe and North America continue to evolve, innovative firms will invest in ECM capabilities that will help them adapt to new changes and maintain the highest level of information governance.
EXECUTIVE SUMMARY

VENDOR LANDSCAPE AND RANKINGS

Enterprise Content Management systems support the recordkeeping of structured and unstructured documents and content, including capture, storage, management, creation, and delivery. The selection process for this analysis centered around those vendors with mature products, globally recognized innovation, and multiple large-scale installations with major retail banking, lending, or payments institutions. In particular, this report looks at both regional and global enterprise content management solutions. Most vendors featured in this report have significant experience supporting content management for other industries; however, for inclusion, all solutions must have active retail banking clients.

This technology analysis includes Adobe Experience Manager, eGistics CloudDocs, EMC Documentum Portfolio, Fiserv Nautilus, Hyland OnBase, Microsoft SharePoint, OpenText ECM Suite, Systemware ECM Suite, and Unisys InfoImage.

By combining our qualitative and quantitative data from interviews with industry experts, financial institutions and vendors, CEB TowerGroup identified 25 attributes that define a “best-in-class” enterprise content management system. These attributes are grouped into four categories that highlight a firm’s user and enterprise needs. Vendor rankings are based on our proprietary five point rating methodology that scores each product on the 25 “best-in-class” attributes. The top vendors were designated as best-in-class performers based on their composite scores in each of the technology categories below.

BEST-IN-CLASS TECHNOLOGY CATEGORIES

Retail banking executives investing in enterprise content management systems should use the Diagnostic Anatomy and scorecard slides on page 24-26 to select the vendor that best aligns with their firm’s business objectives and investment needs.

- **CONTENT MANAGEMENT CAPABILITIES** include those attributes that support core transactional ECM processes across the content life cycle.
  Leaders include EMC Documentum Portfolio, Fiserv Nautilus, and Hyland OnBase.

- **USER EXPERIENCE** includes those attributes that support delivery of a customized experience to users and end consumers.
  Leaders include Adobe Experience Manager, EMC Documentum Portfolio, Fiserv Nautilus, and Hyland OnBase.

- **ENTERPRISE OPERATIONS SUPPORT** includes those attributes that enable enterprise level processing, customization, and customer experience.
  Leaders include EMC Documentum Portfolio, Microsoft SharePoint, and Unisys InfoImage.

- **ENTERPRISE SUPPORT** includes those attributes that influence the financial institution’s tactical fit and strategic alignment with the vendor.
  Leaders include EMC Documentum Portfolio, Fiserv Nautilus, and OpenText ECM Suite.
Mission Statement: The CEB TowerGroup technology analysis process provides a customer-driven, transparent, and unbiased review designed to drive informed business decisions.

- **Current Market**: Provides a view of industry and customer changes, and best practices for technology investment and implementation.
- **Future Investment**: Identifies emerging technologies and innovations.
- **Vendor Landscape**: Provides an overview of key vendors, product features, and market position.
- **Product Rankings**: Highlights best-in-class attributes and shows a comparative perspective of leading products.

**Technology Analysis Presentation Roadmap**

- **Current Market**:
  - **Market Drivers**: Assess changes in the industry and customer behavior.

- **Future Investment**:
  - **Spending Forecasts**: Benchmark total IT and ECM spending with our 2013 Technology Executive Survey.

- **Vendor Landscape**:
  - **List of Players**: Identify key technology firms and their products.

- **Product Ranking**:
  - **“Best-in-Class” Products**: See the top products based on our anatomy categories.

- **Case Study**:
  - Learn how a large bank decentralized loan processing and ECM.

- **Emerging Technology Landscape**:
  - Pinpoint emerging technologies and innovations.

- **Diagnostic Anatomy**:
  - Choose your investment priorities with our proprietary framework.

- **Ranking Methodology**:
  - Review the key components of an investment decision.

- **Feature Audit**:
  - Compare the relative feature offerings by vendors.

- **Vendor Profiles**:
  - Understand the key differentiators between products.
ROADMAP FOR THE PRESENTATION

Current Market ➔ Future Investment ➔ Vendor Landscape ➔ Product Rankings
Firms are prioritizing efficiency, compliance, collaboration, and customer service as the centerpieces of their ECM strategy.

- Executives cite efficiency and cost reduction as top drivers of their content management strategies, and also reference compliance, risk, collaboration, and service.
- Compliance and risk are more important for institutions with 5,000+ employees, whereas smaller institutions tend to focus on cost and efficiency.

The Top Business Drivers of ECM Strategy Are Efficiency and Compliance
Percentage of Technology Executive Respondents, 2011

<table>
<thead>
<tr>
<th>Driver</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improve efficiency</td>
<td>23%</td>
</tr>
<tr>
<td>Optimize business processes</td>
<td>19%</td>
</tr>
<tr>
<td>Compliance</td>
<td>14%</td>
</tr>
<tr>
<td>Reduce costs</td>
<td>11%</td>
</tr>
<tr>
<td>Mitigate risk</td>
<td>8%</td>
</tr>
<tr>
<td>Enable collaboration</td>
<td>8%</td>
</tr>
<tr>
<td>Improve customer service</td>
<td>7%</td>
</tr>
</tbody>
</table>

N=585
Source: AIIM State of the ECM Industry 2011

Compliance/Risk is Especially Important ECM Strategy Driver at Large Organizations
Percentage of Technology Executive Respondents, Multiple Choices Allowed, 2011

<table>
<thead>
<tr>
<th>Category</th>
<th>10-500 employees</th>
<th>500-5,000 employees</th>
<th>5,000+ employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cost and Efficiency</td>
<td>63%</td>
<td>57%</td>
<td>45%</td>
</tr>
<tr>
<td>Compliance and Risk</td>
<td>14%</td>
<td>26%</td>
<td>33%</td>
</tr>
<tr>
<td>Customer Service</td>
<td>12%</td>
<td>12%</td>
<td>13%</td>
</tr>
<tr>
<td>Collaboration</td>
<td>9%</td>
<td>4%</td>
<td>8%</td>
</tr>
</tbody>
</table>

N=585
Source: AIIM State of the ECM Industry 2011
Financial institutions continue to recover from the financial crisis, but need new IT investment for profits to return to long-term norms.

- Although return on equity (ROE) in US banks has dug itself out of financial crisis levels, it still lags below the double-digit averages of pre-2007, in part due to new regulatory burdens dictating capital reserve requirements, fee limits, and processing changes.
- In Q4 of 2012, financial executives had a more positive outlook on 12-month cost pressures than earlier in the year. Sixty-four percent expected higher or somewhat higher costs, versus 68% for the first three quarters of 2012.

US Banking Industry Return on Equity
2005 – 2012

![Graph showing US Banking Industry Return on Equity from 2005 to 2012.](image)

Source: “Quarterly Banking Profile”, FDIC, Q1 2013

Financial Institution Executives’ 12-month Outlook on Cost Pressures
Percentage of FSI Executive Respondents, 2012

![Bar chart showing the percentage of financial institution executives' outlook on cost pressures.](image)

Source: CEB Retail Banking Leadership Council, “Business Barometer”, January 2013
GAINING AND RETAINING CUSTOMERS HINGES ON SERVICE

Primary Reasons to Recommend a Bank
Percentage of Consumer Respondents, United States, 2012

- **Service:** 35%
- **Convenience:** 25%
- **Trust or confidence:** 16%
- **Rates and fees:** 10%
- **Product features:** 7%
- **Other:** 4%

N=5,200
Source: Bain Retail Banking US Touchpoint survey, 2012

Main Reason for Attrition of US Customers
Percentage of Consumer Respondents, Multiple Choices Allowed, 2012

- **Service quality:** 31%
- **Products and services:** 23%
- **Proximity of branches:** 23%
- **Price:** 21%
- **Lack of trust:** 21%
- **Access:** 19%
- **Specific Service Failing:** 16%

Source: Ernst & Young Global Consumer Banking Survey 2012

Quality customer service depends on fast and complete dissemination of data and document content.

- Service is the key reason for deciding whether or not to recommend a bank to their friends and family.
- Almost one-third of customers leave their bank due to poor service quality.
- Banks can use ECM to improve customer service by making content more transparent during potentially stressful and document-heavy processes like origination and refinancing of mortgages, auto loans, and home equity loans.

Service is the key reason for deciding whether or not to recommend a bank to their friends and family. Almost one-third of customers leave their bank due to poor service quality. Banks can use ECM to improve customer service by making content more transparent during potentially stressful and document-heavy processes like origination and refinancing of mortgages, auto loans, and home equity loans.
Forty-two percent of Financial Services Institutions are in the process of replacing or adopting ECM technology.

- Although 36% of banks indicated they would make no major change to their ECM technology before 2017, ongoing improvement and maintenance spending is likely.
- Almost a quarter of FSIs lack ECM technology and have no plans to install it by 2017.
- Twenty-two percent of banks indicated they hadn’t made major changes in their ECM systems in the last five years, indicating a strong market for future upgrades and replacements.

State of ECM Technology Implementation by 2017
Percentage of FSI Technology Executive Respondents, 2013

<table>
<thead>
<tr>
<th></th>
<th>Replacing</th>
<th>Adopting</th>
<th>Have it, no major change</th>
<th>Do not have it</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage</td>
<td>20%</td>
<td>22%</td>
<td>36%</td>
<td>22%</td>
</tr>
</tbody>
</table>

N = 59
Source: “CEB FSI Technology Survey”, 2013

Installation Date of Currently Installed ECM Systems
Percentage of FSI Technology Executive Respondents, 2013

<table>
<thead>
<tr>
<th></th>
<th>2007 or prior</th>
<th>2008 to 2010</th>
<th>2011 to 2012</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage</td>
<td>22%</td>
<td>36%</td>
<td>22%</td>
</tr>
</tbody>
</table>

N = 21
Source: “CEB FSI Technology Survey”, 2013
Banks are in a period of heavy ECM adoption, because it is viewed as a low risk and high value investment.

- The majority of FSIs replacing or adopting ECM technology will do so between 2012 and 2015.
- Very few financial institutions view ECM as a risky technology to adopt, with 81% saying it is low to moderate risk.
- More than 90% of financial executives say that ECM would be a moderate to high value investment at their organization.

Value of ECM Investments
Percentage of FSI Technology Executive Respondents, 2013

Risk of Adoption or Replacement of ECM
Percentage of FSI Technology Executive Respondents, 2013

Source: CEB FSI Technology Survey 2013

N=33
Source: CEB FSI Technology Survey 2013
Banks are using strategic IT investments in ECM to counteract persistent cost pressures and manage an explosion of content.

- Although half of firms spent less than $100,000 on their initial purchase or implementation of ECM, 40% of firms paid over $1 million for purchase and 40% continue to pay more than $100,000 per year on use and maintenance.
- Executives expect positive growth in their institutions’ ECM spending for the next 12 months, as firms attempt to gain competitive edge in a strained market environment.
EMERGING TECHNOLOGY LANDSCAPE FOR ECM

**Definitions**

- **ROI Potential:** Measures the relative returns an institution can expect to receive from an investment in the technology.
- **Technology State:** Measures the technology’s level of development, market maturity, and market adoption.
- **User Impact:** Measures the level of benefit the technology will have on the ECM user.

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**Consumer Facing Technology**

- **Consumer Document Delivery:** allows consumers self-service access to their documents and communications in all major channels
- **Consumer Mobile RDC:** allows consumers to submit check images for deposit from their smartphone or tablet device
- **Cross-Channel Integration:** allows consumers to manage their documents and communications through all major channels as they move through retail banking and lending business processes
- **E-Signature Integration:** allows consumers to electronically sign retail banking and loan forms and submit them for review

**Employee Facing Technology**

- **Mobile Access for Employees:** provides users with smartphone and tablet applications that can capture, access, and manage documents; and can move content through approval and other workflow processes
- **Web Content Management:** allows users to easily create and manage web content, collaborate on documents and processes, and manage digital assets like photos, videos, and music.
- **Optical Character Recognition (OCR) and Intelligent Character Recognition (ICR):** allows systems to convert images of typed or handwritten words into encoded characters during content capture
- **Big Content Analytics:** harnesses the rapid growth in content to generate meaningful and actionable insights to help guide strategy.

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Source: CEB TowerGroup Research
Selecting Featured Enterprise Content Management vendors

CEB TowerGroup identified vendors for this analysis based on expert opinion, product maturity, size of installations, and technological innovation.
ENTREPRISE CONTENT MANAGEMENT ANATOMY

HOW TO USE THIS ANATOMY

The anatomy is designed to assist retail banking executives better assess and prioritize components of their technology investment. As you take this anatomy, please consider your firm's business strategy and current technology maturity.

1. Rate the impact of each attribute to your business and your firm's effectiveness on a 1-5 scale using the grading scale below and tally the results using the scorecard on the next page.

2. Map the results on the scorecard on the following page to identify areas that are most important, but where your firm is least effective.

<table>
<thead>
<tr>
<th>Attribute Grading</th>
<th>Current Effectiveness</th>
<th>Potential Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>5 = Superior Capability</td>
<td>We or our vendor offer this regularly, systematically, and at the highest standard.</td>
<td>5 = Very High Impact</td>
</tr>
<tr>
<td>4 = Strong Capability</td>
<td>We or our vendor offer this regularly and systematically.</td>
<td>4 = High Impact</td>
</tr>
<tr>
<td>3 = Adequate Capability</td>
<td>We or our vendor offer this regularly but in an ad hoc manner.</td>
<td>3 = Moderate Impact</td>
</tr>
<tr>
<td>2 = Marginal Capability</td>
<td>We or our vendor offer this irregularly and in an ad hoc manner.</td>
<td>2 = Low Impact</td>
</tr>
<tr>
<td>1 = Weak or not at all</td>
<td>We or our vendor do not do this at all.</td>
<td>1 = No Impact</td>
</tr>
</tbody>
</table>

Our firm considers this attribute mission critical when performed at the highest standard.

Our firm considers this attribute highly important when performed at the highest standard.

Our firm considers this attribute moderately important when performed at the highest standard.

Our firm considers this attribute somewhat important when performed at the highest standard.

Our firm does not consider this attribute important when performed at the highest standard.

Vendor Stability
The vendor has an established industry presence and can provide long-term support for institutions.

Product Maturity
The vendor possesses a mature product with a growing market share and client base.

Technology Innovation
The vendor possesses a proactive strategy to incorporate innovative technology and strategies into its product development roadmap.

Deployment & Support
The vendor offers multiple options for software licensing, hosting, and IT stock deployment; and provides superior support during deployment of the system.

Solution Pricing
The vendor offers multiple pricing options with flexibility around additional ongoing support packages and price discounting.

Banking Compliance
The system provides superior support for meeting regulations and guidelines with detailed tracking for reporting and audit purposes.

Geographic Support
The system provides superior support for meeting regulations and guidelines with detailed tracking for reporting and audit purposes.

System Integration
The system seamlessly integrates with third-party core systems and ancillary applications.

Scalability and Data Architecture
The architecture provides support to manage growing content volume in a cost effective manner, with fast response for users.

System Architecture
The system is built on common source code with web-based, service-oriented integration that enables data management and maintainability.

Business Process Management
The system provides superior support to define model, analyze, improve, control, and re-engineer business processes and functions.

Business Rules Engine
The system provides a robust and configurable rules engine that allows the enterprise to alter or design rules to meet changing business needs.
Retail Banking executives should complete this scorecard using the ECM diagnostic anatomy tool.

<table>
<thead>
<tr>
<th>Categories</th>
<th>Attributes</th>
<th>Current Effectiveness</th>
<th>Potential Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Document Capture</td>
<td>1. Document Capture</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Content Management</td>
<td>2. Document Creation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Document Storage</td>
<td>3. Document Storage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Connectivity</td>
<td>5. Connectivity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distribution</td>
<td>6. Distribution</td>
<td></td>
<td></td>
</tr>
<tr>
<td>User Interface</td>
<td>7. User Interface</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Modularization</td>
<td>8. Modularization</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Web Content Management</td>
<td>9. Web Content Management</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Administration</td>
<td>10. Administration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Targeted Deployment</td>
<td>11. Targeted Deployment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multichannel Application</td>
<td>12. Multichannel Application</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Content Types</td>
<td>13. Content Types</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Scalability &amp; Data Architecture</td>
<td>17. Scalability &amp; Data Architecture</td>
<td></td>
<td></td>
</tr>
<tr>
<td>System Integration</td>
<td>18. System Integration</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Geographic Support</td>
<td>19. Geographic Support</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Banking Compliance</td>
<td>20. Banking Compliance</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Solution Pricing</td>
<td>21. Solution Pricing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deployment &amp; Support</td>
<td>22. Deployment &amp; Support</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technology Innovation</td>
<td>23. Technology Innovation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Product Maturity</td>
<td>24. Product Maturity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vendor Stability</td>
<td>25. Vendor Stability</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Retail Banking executives should map their attribute scores from the previous page on this matrix to identify the most important areas to their vendor selection.

<table>
<thead>
<tr>
<th>Potential Impact</th>
<th>5 = Very High</th>
<th>4 = High</th>
<th>3 = Moderate</th>
<th>2 = Low</th>
<th>1 = No Impact</th>
</tr>
</thead>
<tbody>
<tr>
<td>Areas of Focus</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Current Effectiveness</td>
<td>1 = Weak</td>
<td>2 = Marginal</td>
<td>3 = Adequate</td>
<td>4 = Strong</td>
<td>5 = Superior</td>
</tr>
</tbody>
</table>

**ENTERPRISE CONTENT MANAGEMENT SCORE CARD**
### FEATURE AUDIT

<table>
<thead>
<tr>
<th>Features</th>
<th>EMC</th>
<th>Documentum</th>
<th>% of Vendors Offering as Standard Feature</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Content Types</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Document</td>
<td>●</td>
<td></td>
<td>100%</td>
</tr>
<tr>
<td>Photo</td>
<td>●</td>
<td></td>
<td>100%</td>
</tr>
<tr>
<td>Text</td>
<td>●</td>
<td></td>
<td>100%</td>
</tr>
<tr>
<td>Audio</td>
<td>●</td>
<td></td>
<td>89%</td>
</tr>
<tr>
<td>Video</td>
<td>●</td>
<td></td>
<td>89%</td>
</tr>
<tr>
<td>Web</td>
<td>●</td>
<td></td>
<td>78%</td>
</tr>
<tr>
<td>SMS/Instant Message</td>
<td>●</td>
<td></td>
<td>33%</td>
</tr>
<tr>
<td><strong>Capture Channels</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>System to System</td>
<td>●</td>
<td></td>
<td>89%</td>
</tr>
<tr>
<td>Web Portal</td>
<td>●</td>
<td></td>
<td>78%</td>
</tr>
<tr>
<td>Mobile</td>
<td>●</td>
<td></td>
<td>100%</td>
</tr>
<tr>
<td>Tablet</td>
<td>●</td>
<td></td>
<td>100%</td>
</tr>
<tr>
<td>Print/Mail</td>
<td>●</td>
<td></td>
<td>78%</td>
</tr>
<tr>
<td>Printer/Scanner</td>
<td>●</td>
<td></td>
<td>89%</td>
</tr>
<tr>
<td>Fax</td>
<td>●</td>
<td></td>
<td>78%</td>
</tr>
<tr>
<td>Email</td>
<td>●</td>
<td></td>
<td>89%</td>
</tr>
<tr>
<td><strong>Delivery Channels</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Web Portal</td>
<td>●</td>
<td></td>
<td>89%</td>
</tr>
<tr>
<td>Mobile</td>
<td>●</td>
<td></td>
<td>100%</td>
</tr>
<tr>
<td>Tablet</td>
<td>●</td>
<td></td>
<td>100%</td>
</tr>
<tr>
<td>Print/Mail</td>
<td>●</td>
<td></td>
<td>100%</td>
</tr>
<tr>
<td>Fax</td>
<td>●</td>
<td></td>
<td>78%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Features</th>
<th>EMC</th>
<th>Documentum</th>
<th>% of Vendors Offering as Standard Feature</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Access Channels</strong></td>
<td></td>
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<tr>
<td>Web Portal</td>
<td>●</td>
<td></td>
<td>100%</td>
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<tr>
<td>Mobile</td>
<td>●</td>
<td></td>
<td>100%</td>
</tr>
<tr>
<td>Tablet</td>
<td>●</td>
<td></td>
<td>100%</td>
</tr>
<tr>
<td>Print/Mail</td>
<td>●</td>
<td></td>
<td>89%</td>
</tr>
<tr>
<td><strong>Deployment Models</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Installed</td>
<td>●</td>
<td></td>
<td>89%</td>
</tr>
<tr>
<td>SaaS</td>
<td>●</td>
<td></td>
<td>89%</td>
</tr>
<tr>
<td>ASP</td>
<td>●</td>
<td></td>
<td>78%</td>
</tr>
<tr>
<td>Cloud</td>
<td>●</td>
<td></td>
<td>89%</td>
</tr>
</tbody>
</table>

= Currently offered  
= Currently offered as an add-on  
= Plan to offer in next 12 months  
= Plan to offer in 24 months  
= Not offered

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CEB TOWERGROUP RETAIL BANKING
### Feature Audit

<table>
<thead>
<tr>
<th>Features</th>
<th>EMC Documentum</th>
<th>% of Vendors Offering as Standard Feature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paper document capture</td>
<td>●</td>
<td>89%</td>
</tr>
<tr>
<td>Paper content capture</td>
<td>●</td>
<td>89%</td>
</tr>
<tr>
<td>Electronic document capture</td>
<td>●</td>
<td>100%</td>
</tr>
<tr>
<td>Electronic content capture</td>
<td>●</td>
<td>89%</td>
</tr>
<tr>
<td>Document Creation</td>
<td>●</td>
<td>78%</td>
</tr>
<tr>
<td>Regulatory Compliance documents and forms</td>
<td>●</td>
<td>67%</td>
</tr>
<tr>
<td>Content Repository</td>
<td>●</td>
<td>100%</td>
</tr>
<tr>
<td>Email Archive</td>
<td>●</td>
<td>78%</td>
</tr>
<tr>
<td>Library Services</td>
<td>●</td>
<td>89%</td>
</tr>
<tr>
<td>Records Management</td>
<td>●</td>
<td>89%</td>
</tr>
<tr>
<td>Physical Records Management</td>
<td>●</td>
<td>56%</td>
</tr>
<tr>
<td>Lifecycle Management</td>
<td>●</td>
<td>89%</td>
</tr>
<tr>
<td>Search Function</td>
<td>●</td>
<td>100%</td>
</tr>
<tr>
<td>Third-Party System Content Transfer</td>
<td>●</td>
<td>89%</td>
</tr>
<tr>
<td>Enterprise Content Transfer</td>
<td>●</td>
<td>89%</td>
</tr>
<tr>
<td>External business partner portal</td>
<td>●</td>
<td>78%</td>
</tr>
<tr>
<td>Branch Portal</td>
<td>●</td>
<td>100%</td>
</tr>
<tr>
<td>Customer Portal</td>
<td>●</td>
<td>100%</td>
</tr>
<tr>
<td>Business Rules</td>
<td>●</td>
<td>100%</td>
</tr>
<tr>
<td>Role-Based Security</td>
<td>●</td>
<td>100%</td>
</tr>
</tbody>
</table>

- ● = Currently offered
- ○ = Currently offered as an add-on
- □ = Plan to offer in next 12 months
- ○ = Plan to offer in 24 months
- □ = Not offered
EMC DOCUMENTUM PORTFOLIO

EMC

Company Overview

EMC Corporation is a global provider of information management products and services, with a specific focus on cloud computing. Since 2003, the firm has invested more than $16.5 billion on R&D and $17 billion in acquisitions. In 2012, EMC’s Information Intelligence Group (IIG) acquired Syncplicity, which provides enterprise file sync and share. EMC IIG also provides EMC OnDemand as a hybrid cloud managed service to streamline deployments and upgrades of its solutions and products. EMC has more than 500 financial services clients and a partner ecosystem of over 80 certified partner solutions. EMC acquired its ECM product, Documentum, in 2003.

Product Overview

The EMC Documentum portfolio is a suite of ECM products integrated with service-oriented architecture (SOA). The solution’s modules include a unified repository (Documentum Platform), BPM and case management (Documentum xCP), intelligent enterprise capture (Captiva), and customer communications (Document Sciences). Documentum provides an object-oriented content repository with a built-in search engine (Documentum xPlore), lifecycle management, and analytics. Modules are also available to support customer correspondence, case management, digital asset management, retention/records management, eDiscovery, and information rights management.

Product Highlights

• Implementation templates, application accelerators, and solutions: Using xCP, EMC and its partners offer templates and solutions to manage content-heavy bank processes like loan origination/servicing, investor services, and onboarding. This speeds time to value by improving workflows and presenting information in context.

• Multi-channel customer correspondence & bank forms creation: Banks can use Document Sciences xPression to create channel-optimized proposals, contracts, statements, billing notices, and correspondence in high volume batches, either on demand or automated through template-based workflows.

• Information governance: Documentum includes governance capabilities for banks for content retention, records management, eDiscovery, and information rights management. This includes federated search across multiple repositories, and a storage infrastructure that facilitates automatic movement of content across storage tiers.

CEB TowerGroup View

EMC is an industry leader in the enterprise content management space with extensive capabilities built through acquisitions and internal development. The solution combines sophisticated core content capabilities for capture, creation, and storage. EMC stands out as the leading ECM provider for retail financial institutions, and earned “best-in-class” recognition for all four categories in this report. Documentum xCP enables enterprise-class business process management and case management for banks as they build ECM into their process architecture. EMC’s IIG Consulting and extensive partner ecosystem offer excellent support for global banks, including vertical solution design and technical ECM expertise. Recent developments like EMC OnDemand and Syncplicity show that EMC continues to strengthen its cloud content management capabilities and offer customers the ability to embrace as much cloud as they need – private, public, and/or hybrid.
ROADMAP FOR THE PRESENTATION

Current Market ▸ Future Investment ▸ Vendor Landscape ▸ Product Rankings
### Phase 1: Content Management Capabilities
- Document Management
- Document Creation
- Web Content Management
- Targeted Deployment
- Content Types
- Business Rules Engine

### Phase 2: User Experience
- Document Capture
- Distribution
- Modularization
- Multichannel Application
- System Architecture
- System Integration

### Phase 3: Enterprise Operations Support
- Document Storage
- Connectivity
- User Interface
- Administration
- Business Process Management
- Scalability and Data Architecture

### Phase 4: Enterprise Support
- Banking Compliance
- Geographic Capability
- Deployment & Support
- Technology Innovation
- Solution Pricing
- Product Maturity
- Vendor Stability

---

**CREATING OUR “BEST-IN-CLASS” PRODUCT RANKINGS**

**Mission Critical**
- Document Management
- Document Creation

**Strong Priority**
- Document Capture
- Distribution

**Product Differentiator**
- Document Storage
- Connectivity

---

**“Best-in-Class” Content Management Capabilities**

**“Best-in-Class” User Experience**

**“Best-in-Class” Enterprise Operations Support**

**“Best-in-Class” Enterprise Support**
Retail Banking executives should use the ranking matrix in combination with the ECM Diagnostic Anatomy to select the vendor that best aligns with their firm’s needs.

- Vendor rankings are based on our proprietary 5-point rating system for each of the 25 attributes in our ECM anatomy.

Listed Alphabetically by Vendor

<table>
<thead>
<tr>
<th>Vendor</th>
<th>Product</th>
<th>Content Management Capabilities</th>
<th>User Experience</th>
<th>Enterprise Operations Support</th>
<th>Enterprise Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adobe</td>
<td>Adobe Experience Manager</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>eGistics</td>
<td>CloudDocs</td>
<td>---</td>
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</tr>
<tr>
<td>EMC</td>
<td>EMC Documentum Platform</td>
<td>4.83</td>
<td>5.00</td>
<td>4.79</td>
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<tr>
<td>Fiserv</td>
<td>Nautilus</td>
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<td>---</td>
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</tr>
<tr>
<td>Hyland</td>
<td>OnBase</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Microsoft</td>
<td>SharePoint</td>
<td>---</td>
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<td>---</td>
<td>---</td>
</tr>
<tr>
<td>OpenText</td>
<td>OpenText ECM Suite</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Systemware</td>
<td>ECM Suite</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>Unisys</td>
<td>InfoImage</td>
<td>---</td>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
</tbody>
</table>

= Best-in-Class in Anatomy Category

Source: CEB TowerGroup Research
EMC Documentum received “Best-in-Class” in Content Management Capabilities, User Experience, Enterprise Operations Support, and Enterprise Support.

- **Content Management Capabilities** include those attributes that support core transactional ECM processes across the content life cycle.
- **User Experience** includes those attributes that support delivery of a customized experience to users and end consumers.
- **Enterprise Operations Support** includes those attributes that enable enterprise level processing, customization, and customer experience.
- **Enterprise Support** includes those attributes that influence the financial institution’s tactical fit and strategic alignment with the vendor.

---

**Content Management Capabilities**

- **Document Capture**: EMC Documentum Mobile enables a variety of content- and process-centric applications that can use Captiva to capture document images using mobile cameras, upload them to a repository, and trigger capture-dependent processes.
- **Document Creation**: EMC Document Sciences xPression automates the creation of customized and personally relevant business communications in retail banking, lending, and payments. These communications are optimized for distribution across multiple channels, including print, email, Web, mobile device, and archive.

**User Experience**

- **User Interface**: Users control their own, personalized view of the information and tasks that pertain to them, and can manipulate the widget-based workspace to get the repository content and external information they need.
- **Targeted Deployment**: EMC’s system has integrated with many core systems in banking including loan origination, core banking, and loan servicing, as well as over 75 certified partner solutions covering functions like customer onboarding, investor servicing, customer communications, and governance/compliance.

**Enterprise Operations Support**

- **Business Process Management**: Documentum xCP supports extended BPM and case management functionality including work queue management, a business activity monitor, drag-and-drop process templates, and a service oriented integration framework. EMC’s IIG Consulting supports customization and integration of xCP BPM functions for many banking industry lines of business (LOB).
- **Scalability and Data Architecture**: Documentum is highly scalable, including several financial services implementations that manage over a billion objects, and the ability to process over 10 million images daily.

**Enterprise Support**

- **Banking Compliance**: EMC has excellent experience with and support for the regulations in the retail financial industry. The firm can provide solutions for specific regulatory needs, but also maintains strong overall information governance. This information governance is a fundamental part of EMC’s strategy and a major differentiator for the firm in the market.
- **Geographic Capability**: EMC provides language packs for its web-based client interfaces that can be selected at the browser level. When a user logs in, the locale of their browser automatically determines the correct language pack to load.

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Source: CEB TowerGroup Research

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ENTERPRISE CONTENT MANAGEMENT ANATOMY

To arrive at a vendor ranking, CEB TowerGroup developed a proprietary scoring metric outlined by the attributes within this anatomy that highlights the major elements of an enterprise investment decision. This metric assumes that every element is not equally important, and therefore assigns a higher level of importance to those attributes critical to an enterprise content management system. The remaining attributes are then divided further into three tiers to reflect their level of importance, highlighted below.

**Tier 1 Attributes – “Mission Critical”**
- Document Management
- Document Creation
- Web Content Management
- Targeted Deployment
- Content Types
- Business Rules Engine
- Banking Compliance

**Tier 2 Attributes – “Strong Priority”**
- Document Capture
- Distribution
- Modularization
- Multichannel Application
- System Architecture
- System Integration
- User Interface
- Technology Innovation

**Tier 3 Attributes – “Product Differentiators”**
- Document Storage
- Connectivity
- User Experience
- Enterprise Operations Support
- Solution Pricing
- Banking Compliance
- Geographic Support
- System Integration
- Scalability and Data Architecture
- Business Process Management
- Business Rules Engine

Scoring Methodology

The vendor possesses a mature product with a growing market share and client base.

- **Product Maturity**

The vendor has an established industry presence and can provide long-term support for institutions.

- **Vendor Stability**

The vendor possesses a proactive strategy to incorporate innovative technology and strategies into its product development roadmap.

- **Technology Innovation**

The solution provides access controls that satisfy workflow hierarchies, reporting, and compliance requirements.

- **Targeted Deployment**

The system provides superior content capture and management across all of the bank’s delivery channels.

- **Multichannel Application**

The vendor offers multiple options for software licensing, hosting, and IT stock deployment; and provides superior support during deployment of the system.

- **Deployment & Support**

The system seamlessly integrates with third-party core systems and ancillary applications.

- **System Integration**

The system provides superior support for managing growing content volume in a cost effective manner, with fast response for users.

- **Scalability and Data Architecture**

The system is built on common source code with web-based, service-oriented integration that enables data management and maintainability.

- **System Architecture**

The system is designed to capture, store and retrieve an extensive range of document and content types and formats from electronic and physical sources.

- **Content Types**

The system provides intuitive tools to support online collaboration between users and bank customers.

- **Web Content Management**

The system efficiently retrieves and manages content volume in a cost effective manner, with fast response for users.

- **User Interface**

The system possesses an intuitive and configurable user interface with dashboards that guide users through defined processes.

- **Modularization**

The system has multiple modules that use industry interface standards for interfaces and may be configured for individual implementation.

- **Administration**

The solution provides access controls that satisfy workflow hierarchies, reporting, and compliance requirements.

- **Targeted Deployment**

The system provides intuitive tools to support online collaboration between users and bank customers.

- **Business Rules Engine**

The system seamlessly integrates with third-party core systems and ancillary applications.

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The system provides intuitive tools to support online collaboration between users and bank customers.
CEB TowerGroup develops a unique and proprietary scoring methodology that highlights the key priorities for an executive’s investment decision.

- Every vendor product featured in this report is scored on each of the 25 attributes outlined in the Enterprise Content Management Diagnostic Anatomy on a standardized 1-5 scale.

- Each attribute is assigned a weighting based on its relative importance to an ECM investment decision for a retail financial institution.

- We calculate the weighted average of a product’s attribute scores in each of the 4 categories of the anatomy to arrive at an overall category score.

Source: CEB TowerGroup Research